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EXAMINER	
ROYSTON, ELIZABETH	

ART UNIT	PAPER NUMBER
1747	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/501,929	GRUAU ET AL.	
	Examiner	Art Unit	
	Elizabeth Royston	1747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 November 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-17, 19, 21-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-17, 19, 21-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 14, 16, 17, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fillmore (US PN 5927567) in view of Magerle (US PN 3313875), Schneider (US PN 6382438 B1), and Amberg (US PN 4314799).

With regard to claim 14, Fillmore teaches a compression molding method for manufacturing plastic parts (col. 2, line 33) having a neck provided with an orifice (figure 5), comprising the steps of constructing the compression tool to produce a molded neck having a top wall (figure 9, item 60 and top wall portion of item 22) that comprises a thinned zone having a contour that delimits the shape of the orifice (col. 2, line 61-62, 65-67; figure 10, item 60), where the thinned zone is bounded by a notch (item 62)

having a section in a diametric plane passing through the axis of the neck which is oriented along a direction approximately parallel to the axis of the neck, and such that the top wall also comprises a breakoff zone in which a mechanical force can be applied to the top wall with sufficient intensity to break the top wall at the notch (specification, paragraph 15, where the breakoff zone is defined as the area of breakage in the notch) (col. 2, line 61-62, 65-67; figure 10, area contained by notch 62), opening the molding tool by relative displacement of the moving parts (col. 3, line 2-3, where compression molding intrinsically requires a molding tool with moving parts in order to compress the material, and placing the part 22 into a holder would require the removal of the part from the mold after opening), applying the mechanical force sufficient to cause a break to occur at the notch (col. 2, line 66-67, item 62) and detach at a wall of the top wall, said wall being torn off after molding and removed by applying an axial thrust, thereby opening up the orifice (col. 3, line 1-6; figure 10).

Fillmore is silent with regard to the details associated with the compression molding method.

Magerle teaches a compression molding method (col. 1, line 17-18) using compression molding tools for manufacturing plastic parts having a neck provided with sealed or open top (col. 6, line 47-51) comprising the steps of bringing the blank to an appropriate temperature (col. 1, line 26-28), and then placing the blank in an air gap between at least two moving parts of a compression molding tool (col. 1, line 28-30; col. 4, line 18-22; figure 3, item 78) and brining the at least two moving parts towards each other to compress the blank (col. 4, line 27-30), the plastic material of the blank being

caused thereby the flow so as to fill the cavities in the moving parts until the moving parts stop moving relative to each other (the transition between figures 3, 6, and 7), the cavities once brought towards each other defining a volume of the part with a neck (figure 7, item 102), and opening the molding tool by the relative displacement of the moving parts (col. 6, line 61-62).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the compression molding method in the teaching of Magerle as the compression molding method in the teaching of Fillmore. The rationale to do so would have been the motivation provided by the teaching of Magerle, that to use such a compression molding method predictably results in the successful formation of compression molded plastic parts having a neck (col. 2, line 62-64) and an orifice such as caps (col. 1, line 15-21).

Fillmore does not explicitly disclose the compression tool being constructed such that the thinned zone is bounded by a notch having a section in a diametric plane passing through the axis of the neck which is oriented along a direction approximately parallel to the axis of the neck, the application zone being distinct from the thinned zone, the compression tool further being constructed such that the top wall also includes two zones that can resist the mechanical force, one of the zones being designed to transmit the mechanical force and the other of the zones acting as a support.

Schneider teaches a method of compression molding plastic parts (col. 2, line 45-47) comprising the steps of constructing the plastic part with a molded neck having a

top wall (figure 4, area of item 206, 220) that comprises a thinned zone having a contour that delimits the shape of the orifice (col. 4, line 50-52; figure 4, item 220), the plastic part being constructed such that the thinned zone is bounded by a notch (figure 4, the notch below the area of item 210) having a section in a diametric plane passing through the axis of the neck which is oriented along a direction parallel to the axis of the neck, and such that the top wall also comprises a breakoff zone in which a mechanical force can be applied to the top wall with sufficient intensity to break the top wall at the notch (col. 6, line 10-12), the application zone (figure 4, item 230, 240) being distinct from the thinned zone (figure 4, item 220), the plastic part further being constructed such that the top wall also includes two zones that can resist the mechanical force (col. 4, line 52-54), one of the zones being designed to transmit the mechanical force (figure 4, item 230, 240) and the other of the zones acting as a support (figure 4, item 220), and applying the mechanical force to the application zone sufficient to cause a break to occur at the notch and detach at least part of the top wall (col. 5, line 20-28; col. 6, line 10-12), thereby opening up the orifice (col. 5, line 29-32).

In this case, the breakage in the teaching of Schneider is achieved through the use of lateral force, whereas the breakage in the teaching of Fillmore is achieved completely through the use of an axial thrust. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a method of breakage comprising a notch and an application zone as in the teaching of Schneider as the method of breakage in the teaching of Fillmore. The rationale to do so would have been the motivation provided by the teaching of Schneider that to have such a notch and

application zone predictably results in the ability to apply a "lever-arm" effect so as to cause breaking at the notch in the breakoff region (col. 4, line 44-49), thereby providing a known alternative method of opening orifices in compression molded necks.

Fillmore does not explicitly disclose continuously moving tools.

Amberg teaches that a method of compression molding using continuously moving tools was known in the art at the time of the invention (abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to mold the neck in the teaching of Fillmore in a continuous compression molding method as in the teaching of Amberg. The rationale to do so would have been the motivation provided by the teaching of Amberg that to use such continuously moving tools predictably results in the ability to compression mold large quantities of thermoplastic articles (col. 1, line 27-31), where large quantities of the neck in the teaching of Fillmore would be expected since the neck is used in packaging applications (col. 1, line 34-37).

With regard to claim 16, Fillmore in view of Schneider is silent as to the angle of the V or the angle of the bisecting line. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the angle of the V and the bisecting angle for the ease of breakage in the thinned zone.

With regard to claims 17 and 19, Fillmore does not explicitly disclose a stick having an end at which force can be applied laterally to cause breakage of the breakoff zone or the physical characteristics of such a stick.

Schneider teaches a top wall (figure 4, lower portion of item 220) comprising a transverse wall (figure 4, bottom surface of item 220) and a stick having an end at which a force can be applied laterally to cause breakage of the breakoff zone (figure 4, area of item 230 and upper portion of item 220).

Schneider further teaches a top wall comprising a transverse wall (figure 4, bottom surface of item 220) acting as a shutter and a protuberance with a T-shaped profile (figure 4, item 230 demonstrates the "arms" and item 220 demonstrates the "stem" of the T-shape), forming a ring groove on an outer surface thereof (figure 4, grooves around item 210), with relative displacement causing tearing off and then removal of the shutter (col. 6, line 10-12).

Although Schneider does not explicitly disclose prongs of a fork or rail may be engaged, the structure of top wall in the teaching of Schneider is intrinsically capable of being engaged with the prongs of a fork or a rail.

In this case, the breakage in the teaching of Schneider is achieved through the use of lateral force, whereas the breakage in the teaching of Fillmore is achieved completely through the use of an axial thrust. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to add the stick in the teaching of Schneider to the breakoff zone in the teaching of Fillmore. The rationale to do so would have been the motivation provided by the teaching of Schneider that to have

such a stick predictably results in the ability to apply a "lever-arm" effect so as to cause breaking of the thinned zone in the breakoff region (col. 4, line 44-49), thereby providing a known alternative method of opening orifices in compression molded necks.

With regard to claim 21, Fillmore does not explicitly disclose the details of the compression molding tool.

Amberg teaches the parts of a continuously moving compression molding tool operate by a continuous movement orthogonal to the direction along which the parts move toward each other (abstract; figure 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to mold the neck in the teaching of Fillmore in a continuous compression molding method as in the teaching of Amberg. The rationale to do so would have been the motivation provided by the teaching of Amberg that to use such continuously moving tools predictably results in the ability to compression mold large quantities of thermoplastic articles (col. 1, line 27-31), where large quantities of the neck in the teaching of Fillmore would be expected since the neck is used in packaging applications (col. 1, line 34-37).

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fillmore (US PN 5927567) in view of Magerle (US PN 3313875), Schneider (US PN 6382438 B1), and Amberg (US PN 4314799), as applied for claims 14, 16, 17, 19, and 21 above,

and in further view of Buhler (US PN 5346659) and Hwang (US PGPub 2003/0039717 A1).

With regard to claim 15, Fillmore does not explicitly disclose breaking during cooling as soon as the temperature of the plastic material becomes close to a vitreous transition temperature

Buhler teaches a that a method of applying the mechanical force to the breakoff zone sufficient to cause a break to occur at the notch and detach at a wall of the top wall, said wall being severed while still in the mold (col. 4, line 19-24) and removed by applying an axial thrust (col. 4, line 19-27), thereby opening up the orifice was known in the art at the time of the invention.

Since Buhler teaches that breakoff in the mold and immediately following molding was known in the art at the time of the invention (Buhler, col. 4, line 15-21), it would have been obvious to one of ordinary skill in the art at the time of the invention to break the plastic part as soon as the temperature of the plastic material becomes close to a vitreous transition temperature at the breakoff zone. The rationale to do so would have been the motivation provided by the teaching of Hwang that to break a plastic at a temperature at the transition between the solid and the molten materials predictably results in the formation of a clean break at the interface (paragraph 37, line 21-26).

5. Claims 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fillmore (US PN 5927567) in view of Magerle (US PN 3313875), Schneider (US PN

6382438 B1), and Amberg (US PN 4314799), as applied for claims 14, 16, 17, 19, and 21 above, and in further view of Axelrad (US PN 2714226).

With regard to claims 22 and 23, Fillmore does not explicitly disclose that the compression molding tool comprises a first part made of a less rigid plastic material at least in the part of the cavity used for shaping the breakoff zone and a second metallic part.

Axelrad teaches that it was known in the art at the time of the invention to use elastomeric (a type of plastic) dies in molding processes (col. 1, line 39-41) when molding complex shapes in plastic materials (col. 1, line 34-37; 46-49; figure 1, item 18), giving an example where the only the first part of the mold is an elastomer (col. 2, line 13-18; figure 1, item 16). Although Axelrad does not explicitly disclose the second half of the mold as metal, since Axelrad teaches that conventional dies, unlike the elastomeric die of the invention, are made of metal (col. 3, line 59-64), and since figure 1 clearly depicts only the first part of the mold 16 as made of an elastomer, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the second half of the mold (item 30) out of metal.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a plastic molding tool as in the teaching of Axelrad to mold the complex shape of the toroidal groove and breakoff zone of the plastic part in the teaching of Schneider in view of Magerle and Buhler. The rationale to do so would have been the motivation provided by the teaching of Axelrad, that to use an elastomeric mold

predictably results in the formation of molded good quality complex shapes (col. 3, line 63-68) at lower costs than with a metal die (col. 1, line 22-28).

With regard to claim 24, Fillmore does not explicitly disclose the details of the compression molding tool.

Magerle teaches a first moving part comprising a cavity produced with a stopper to close off the orifice (figure 6, item 70, 72), the stopper being positioned such that an inner surface thereof acts partially as a molding cavity for shaping the neck (col. 6, line 38-40; figure 7, item 70, 72), at least in the breakoff zone as would be the case in the teaching of Schneider in view of Magerle.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the compression molding method in the teaching of Magerle as the compression molding method in the teaching of Fillmore. The rationale to do so would have been the motivation provided by the teaching of Magerle, that to use such a compression molding method predictably results in the successful formation of compression molded plastic parts having a neck (col. 2, line 62-64) and an orifice such as caps (col. 1, line 15-21).

With regard to claims 25 and 26, Fillmore does not explicitly disclose the breakoff zone is shaped using a part of the moving stopper which forms a toroidal edge; however, it would have been obvious to one of ordinary skill in the art at the time of the invention that if a groove as in the teaching of Fillmore in view of Magerle, Schneider,

and Amberg was desired on the top of the neck, to use a mold with the inverse shape of the desired groove.

Response to Arguments

6. Applicant's arguments, see the after final amendment, filed 11/1/2010, with respect to the rejection(s) of claim(s) 14-17, 19, and 21-26 under 35 USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly applied prior art in addition to a new interpretation of the previously applied prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Royston whose telephone number is 571-270-7654. The examiner can normally be reached on M-F 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. R./
Examiner, Art Unit 1747

/Richard Crispino/
Supervisory Patent Examiner, Art Unit 1747